

“LINE INTEGRAL CONVOLUTION ON ARBITRARY 3D PLANE USING SOLID TEXTURING”, The Institute of Image Electronics Engineers of Japan, Paper and Material Abstracts Vol. 29, No. 4, June 2000

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The line integral convolution (LIC) is a method of visualizing a vector field, now receiving much attention. Employing textures for flow representation, the LIC enables an intuitive and effective visualization of complicate vector fields in comparison with those visualization methods using geometric primitives such as arrows, streamlines, or particles. The LIC has had a range of applications restricted simply to lattice of 2D structure, which is expanded by this study to afford to visualize flows on arbitrary 3D planes. There is a combination of an input image frame using solid noises and a direct calculation of streamlines in a 3D space, which permits torsion-less textures to be generated even on solid surfaces of any configuration, allowing for accurate flow visualization. Proposed additionally is a high rate processing of the 3D LIC, aiming at better dialogicality to be secured.